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Subject: Monitoring of the Santa Fe Watershed Thinning

To: Forest Supervisor, Santa Fe National Forest

On May 25, Dave Conklin of our staff met with Dave Isackson (Española RD) and Don Peterson (FS thinning contractor) for an examination of the Santa Fe Municipal Watershed project area. The objectives were to observe the progress of the treatments, to determine the level of mortality among the standing (leave) trees in the thinned areas, and to address any other insect and disease concerns. Use of the contractor's motorized cart over a circuitous route of about 15 miles provided a very good "cross sectional" view of the treated area. Several stops were made, some providing panoramas of the treated and untreated landscape.

By now, almost 3,000 acres of the watershed have been thinned, including all of the Phase 1, 2, and 3 areas (south of the Santa Fe River). Approximately 1,300 acres were thinned in 2003, the remainder since February 2004. Treatment has included both mastication and hand thinning/piling, in roughly equal proportions. Ongoing work with the Fecon head/masticator equipment was observed in the Phase 4 treatment area (north of the Santa Fe River).



Mastication treatment, 2003



Hand thinning/piling treatment, 2003

On a previous visit to the project area last September, scattered tree mortality (including several white pines) was observed in the Agua Sarca drainage, which had been hand-thinned and piled in early 2003. Much of this mortality was caused by *Ips* bark beetles and may well have been a result of beetles breeding in and emerging from the pine slash. At that time, we had estimated that no more than one to two percent of the leave trees had died.

Our recent examination found that only minor amounts of additional tree mortality have occurred since last fall. Overall, mortality among leave trees is still probably less than one to two percent. This level of mortality appeared to be no more than (and possibly less than) that which has occurred recently in untreated portions of the surrounding landscape.



Burning of slash piles over the past winter in the Phase 1 area resulted in significant amounts of crown scorch in some stands, especially where these fires were allowed to “creep” to consume additional fuels. Most of the scorched trees are expected to survive, however. Overall, these fires were probably beneficial.



Spring 2004 thinning

The several hundred acres of pine and pine/mixed forest that were hand-thinned late this winter and spring are of some concern, since the fresh slash piles and logs could (again) lead to residual tree mortality from bark beetles. Fresh piles in the Phase 2 area, near the main access road into the Watershed, were found to be heavily infested with *Ips* (probably *Ips pini*). Improved moisture conditions this spring may alleviate the potential for residual tree mortality; however, continued monitoring of these stands is recommended.

The only part of the project area where we found trees recently attacked by bark beetles was in the Phase 4 area, directly across from the Agua Sarca drainage.

Here, in an area machine-masticated a few weeks earlier, several standing green piñons had been recently attacked by *Ips confusus*. This is not surprising, given the amount of piñon mortality that occurred in the lower portion of the watershed late last year.

One of the “peripheral” aspects of this project (with fuels reduction being the primary objective) involves the rather large population of white pine in the watershed. Since white pines are immune to the dwarf mistletoes that frequently affect ponderosa pine and Douglas-fir in this area, they are good trees to retain. Moreover, because the risk of white pine blister rust is very low (due to scarcity of susceptible *Ribes*, the alternate host for this disease), the watershed provides a natural “refugium” for this species, which is threatened by this disease in southern New Mexico.



White pines retained in treated stand.

We are pleased to see that white pine is being favored in the project area, and we continue to recommend that as many of these trees be retained as possible. The majority of the white pines observed in the treated stands appeared healthy, although several had experienced crown dieback, probably drought-related.

The Phase 4 treatment area will provide additional opportunities to favor white pines. Because these trees can be prone to sun-scald, it should be beneficial to retain some denser groups of them (where these occur) in the remainder of the project area. Favoring them in the Santa Fe Watershed will nicely support ongoing national efforts to protect and promote white pines.

/s/ Debra Allen-Reid
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cc: Maria T Garcia, Leonard Lucero, David W Isackson